SHORT COMMUNICATION

Rediscovery of *Uncaria cordata* (Lour.) Merr. var. *cordata* (Rubiaceae: *Naucleeae*) in Australia

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Uncaria Schreb. (Rubiaceae: *Naucleeae*) comprises approximately 34 species distributed in central America, south-east Asia, Malesia, the western Pacific, Australia and Africa (Ridsdale 1978). All species are vines, characterised by the presence of persistent woody hooks at stem nodes and on old inflorescences. These hooks are the climbing agents within the genus and represent reduced and modified branches from one of the two axillary buds (Ridsdale 1978). Robbrecht (1988) placed *Uncaria* in the tribe *Cinchoneae* within the subfamily *Cinchonoideae*, although it is now accepted to be in the tribe *Naucleeae* (Razafimandimbison & Bremer 2002). The tribe *Naucleeae* is distinguished from other tribes in Rubiaceae by having the combination of "numerous flowers arranged in globose inflorescences and epigynous floral nectaries deeply embedded in hypanthia" (Razafimandimbison & Bremer 2002).

Currently, three species of *Uncaria* are recorded for Australia (Cooper & Cooper 2004; Forster & Halford 2007), with all species restricted to Queensland, although none are endemic. *Uncaria callophylla* Blume ex Korth. is found on far northern Cape York Peninsula, *U. cordata* (Lour.) Merr. var. *cordata* is known only from between Gordonvale and Innisfail (south of Cairns), and *U. lanosa* var. *appendiculata* (Benth.) Ridsdale occurs discontinuously from the Iron Range area on Cape York Peninsula to the Tully River. See **Fig. 1** for illustrations of all species.

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Uncaria cordata was first recorded for Australia in 1922 based on a collection by C.T. White from Mt Bellenden Ker at *c.* 450 m altitude. Until recently, this remained the only known collection of the species from Australia.

Following severe Tropical Cyclone "Larry" in March 2006 numerous landscape scale vegetation surveys (to assess exotic weed species occurrences) were undertaken in affected rainforest areas by researchers at CSIRO, Atherton including the first author. Cyclone "Larry" crossed the coast in the Innisfail area (south of Cairns) and proceeded in a westerly direction across the Atherton Tableland. "Larry" was a high category 4 cyclone whose winds produced anything from severe to slight forest damage and was regarded as a once in 50 year event (Turton 2008). One of these surveys, in April 2007 at the Australian Insect Farm (Hasenpusch 1999) on the Seymour Range, north of Innisfail, recorded the second collection of *Uncaria cordata* from Australia at an altitude of *c.* 70 m.

Uncaria cordata (Lour.) Merr., *Interpr. Herb. Rumph.* 479 (1910); *Restiaria cordata* Lour., *Fl. Cochinch.* 639 (1790); *U. cordata* var. *cordata*, Ridsdale, *Blumea* 24: 75 (1978). **Type:** *Loureiro s.n.* (BM), *fide* Ridsdale (1978: 74–75).

For full synonomy see Ridsdale (1978: 74–75).

***Specimens examined*: Queensland.** Cook District: [Mt] Bellenden Ker, Mar 1922, *White 1272* (BRI); Australian Insect Farm, off Davis road near Garradunga, Seymour Range, Apr 2007, *Ford AF4998 & Jensen* (BRI, CNS).

***Distribution and habitat*:** *Uncaria cordata* var. *cordata* occurs from Burma and Thailand

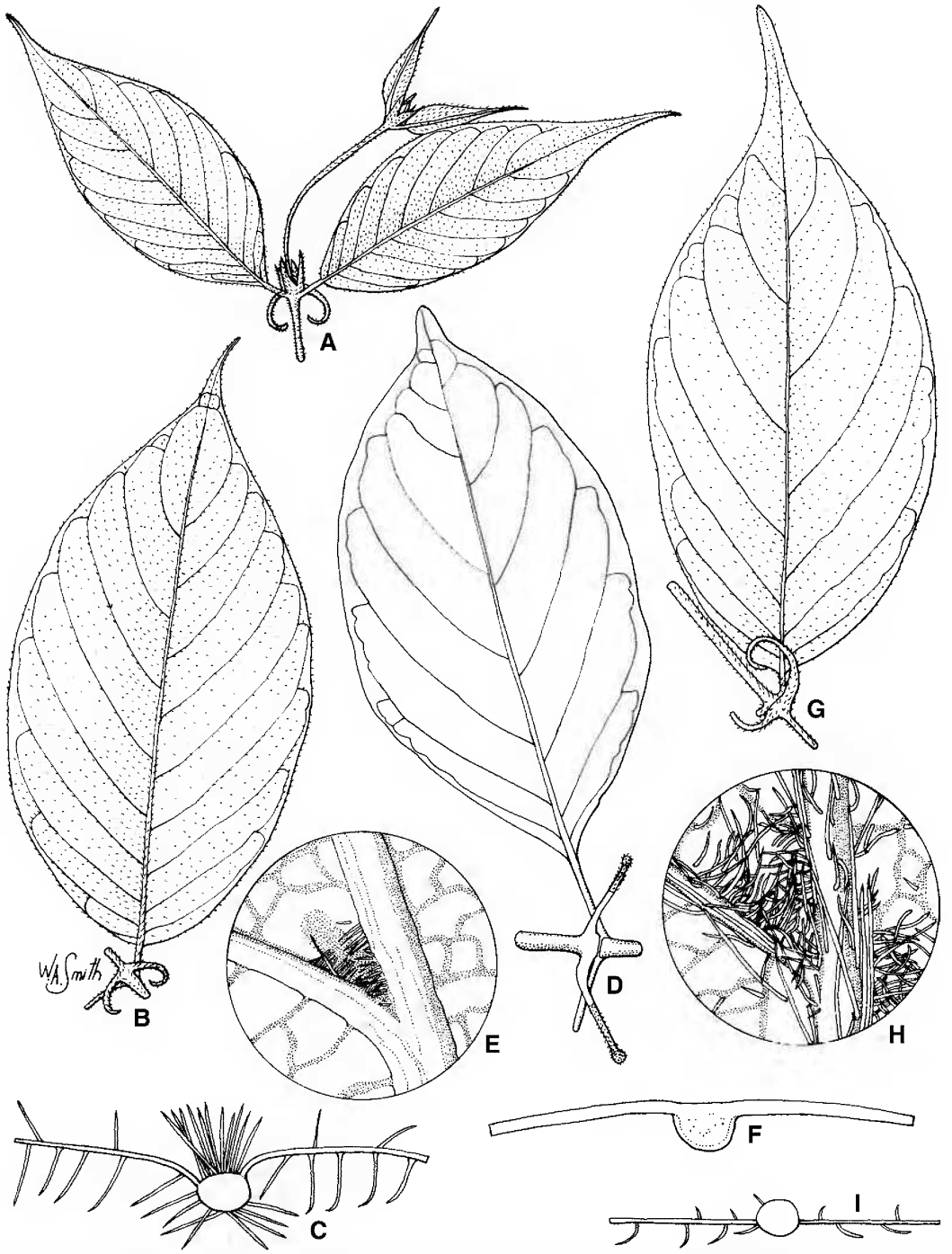

Fig.1. A–C, ***Uncaria cordata*** var. ***cordata***. A. branchlet showing habit, paired hooks and stipules × 0.6. B. abaxial surface of leaf blade and hooks × 0.6. C. cross section of leaf blade showing depressed midrib and rigid hairs × 20. D–F, ***U. callophylla***. D. abaxial surface of leaf blade and hooks × 1. E. abaxial surface showing domatia at midrib-lateral vein junction × 20. F. cross section of leaf blade showing flush midrib × 20. G–I, ***U. lanosa*** var. ***appendiculata***. G. abaxial surface of leaf blade and hooks × 1. H. abaxial surface showing domatia at midrib-lateral vein junction × 20. I. cross section of leaf blade showing raised midrib and hairs × 20. A–C *Ford AF4998* (BRI), D–F *Hyland 10953* (BRI), G–I *Ford AF4075* (BRI). Del. W.Smith.

to the Philippines, throughout Malesia (including New Guinea), reaching a southern limit in Australia. In Australia it is confined to the Wet Tropics bioregion in north-eastern Queensland, where it is currently known from only two localities. Although habitat data for the Mt Bellenden Ker area where White collected his specimen from are lacking, the vegetation at *c.* 450 m is likely to be mesophyll rainforest on a granite substrate. On the Seymour Range the substrate is metamorphic (schists, gneisses and metasediments) whilst the vegetation is similarly mesophyll rainforest. Common canopy species on the Seymour Range in association with *Uncaria cordata* include: *Backhousia bancroftii* F.M.Bailey & F.Muell. ex F.M.Bailey, *Cardwellia sublimis* F.Muell., *Carnarvonia araliifolia* F.Muell. var. *araliifolia*, *Elaeocarpus bancroftii* F.Muell. & F.M.Bailey, *Endiandra montana* C.T.White, *Flindersia bourjotiana* F.Muell., *Flindersia pimenteliana* F.Muell., *Macadamia whelanii* (F.M.Bailey) F.M.Bailey and *Musgravea heterophylla* L.S.Sm. Common small trees and shrubs on the Seymour Range include: *Apodytes brachystylis* F.Muell, *Brombya platynema* F.Muell., *Cryptocarya lividula* B.Hyland, *Cyclophyllum multiflorum* S.T.Reynolds & R.J.F.Hend., *Dysoxylum klanderi* F.Muell., *Hernandia albiflora* (C.T.White) Kubitzki, *Pittosporum rubiginosum* A.Cunn., *Polyscias australiana* (F.Muell.) Philipson and *Symplocos paucistaminea* F.Muell. & F.M.Bailey. The vegetation at these two localities fall within two Regional Ecosystems: 7.12.1a and 7.11.1a. (see www.derm.qld.gov.au/redd).

***Phenology*:** Flowers are unknown in Australia; fruits have been recorded in March.

Notes: The Australian species of ***Uncaria*** may be distinguished with the following identification key.

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1 Leaf upper surface glabrous, domatia present as tufts of hairs on lower surface. . . . . **U. callophylla**

1. Leaf upper surface variously hairy, domatia present or absent. 2

2 Midrib, lateral and minor venation depressed above on dried material; domatia absent . . . . . **U. cordata**

2. Midrib and lateral venation raised above, minor venation flat above; domatia present . . . . . **U. lanosa** var. **appendiculata**

***Conservation status*:** Assuming that the Mt Bellenden Ker (Wooroonooran National Park) population is extant, although not verified, that would be the only occurrence of *Uncaria cordata* within the World Heritage Area (WHA) of the Wet Tropics. The Seymour Range population is on private land outside of the WHA and is currently known to comprise six individual plants, none of which have been seen fertile. The linear geographical separation of these two populations is *c.* 25 km. The regional ecosystems in which these populations occur are common both around and between these populations, so there appears to be plentiful potential habitat; however, no additional recordings of *U. cordata* have been made. This is remarkable given that it is a conspicuous species and co-occurs with *U. lanosa* var. *appendiculata* on the Seymour Range. At the base of Mt Bellenden Ker *U. lanosa* is not an uncommon vine and has been collected numerous times within the known range of *U. cordata*. Presently *U. cordata* is classed as **Rare** under *Queensland Nature Conservation Act (Wildlife) Regulation 2006*; however, we consider it to be at risk at this time due to the single verified population and small number of individuals within Australia. As pointed out by Fell (2007), there is a need to acknowledge the "difficulties in attributing conservation status to taxa which are rare in Queensland……., but widespread in neighbouring regions", such as Malesia (including New Guinea). We suggest that within Australia, *U. cordata* has an extent of occurrence no more than 250 km^2 and an area of occupation no more than 10 km^2. *Uncaria cordata* could be allocated the status

of **Vulnerable** as it satisfies Criteria D1 and D2 of the IUCN (2001); however, this may be premature until more thorough searches for this species are undertaken in the Wet Tropics.

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